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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/659,358	09/11/2003	Masahide Sugiyama	427-83	5550

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EXAMINER	
WILLS, MONIQUE M	

ART UNIT	PAPER NUMBER
1746	

DATE MAILED: 09/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

T.P

Office Action Summary	Application No.	Applicant(s)	
	10/659,358	SUGIYAMA ET AL.	
	Examiner	Art Unit	
	Monique M. Wills	1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 June 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *8/23/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

PD

DETAILED ACTION

Response to Amendment

This Office Action is responsive to the Amendment filed June 15, 2005. Claims 1, 9 12 & 14-15 stand rejected under 35 U.S.C. 102(b) as being anticipated by Nakamizo et al. JP 2001-176482. Claims 1-3 & 9-15 stand rejected under 35 U.S.C. 102(e) as being anticipated by Pekala et al. U.S. Pub. 2002/0142214. Claims 4-8 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Pekala et al. U.S. Pub. 2002/0142214 in view of Oka et al. U.S. Patent 5,830,603.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 9 12 & 14-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakamizo et al. JP 2001-176482.

In re claim 1, Nakamizo teaches a separator for a lithium ion secondary battery, comprising: a polyolefin porous base material (paragraph 10); and a vinylidene fluoride resin porous layer; wherein the vinylidene fluoride layer is provided on one surface of the porous base material. See the Abstract.

With respect to claim 9, the porous base material has a thickness of 30 microns (paragraph 11).

As to claim 12, the vinylidene fluoride resin consists of a vinylidene fluoride homopolymer (paragraph 12).

In re claims 14 & 15, the separator is employed in a lithium ion secondary battery comprising: a positive electrode obtained by bonding a positive electrode active material to a positive electrode current collector; a negative electrode obtained by bonding a negative electrode active material to a negative electrode current collector; and an electrolytic solution containing lithium ions held in the separator (paragraph 1 & 21).

Therefore, the instant claims are anticipated by Nakamizo.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3 & 9-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Pekala et al. U.S. Pub. 2002/0142214.

In re claim 1, Pekala teaches a separator for a lithium ion secondary battery, comprising: a polyolefin porous base material (paragraph 41); and a vinylidene fluoride resin porous layer (paragraph 40); wherein the vinylidene fluoride layer is provided on one surface of the porous base material. See Example 1.

As to claim 2, the resin contains more than 50% vinylidene fluoride (par. 40). The limitation with respect to the vinylidene fluoride resin having a molecular weight of 150,000 to 500,000, is considered an inherent property of

the resin set forth in the prior art, because Pekala teaches the same vinylidene fluoride employed by Applicant. Furthermore, "products of identical chemical composition can not have mutually exclusive properties." A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658(Fed. Cir. 1990). In the instant case, Pekala' s vinylidene fluoride has the instant MW, because the resin has an identical chemical structure to resin employed by Applicant.

With respect to claim 3, the porous PVDF layer has a thickness of 1.3 to 4.1 microns. See Table II. The thickness of the PVDF layer is determined by subtracting the 21 micrometer thick UHMWPE web from the total thickness of the separator.

With respect to claim 9, the porous base material has a thickness of 30 microns (paragraph 41).

With respect to claims 10, the air permeability as measured by a Gurley air permeability tester of the porous base material is 1000 sec/100 ml or less (paragraph 51).

As to claim 11, the porosity of the microporous separator is 50.5% (paragraph 61).

As to claim 12, the vinylidene fluoride resin consists of a vinylidene fluoride homopolymer (paragraph 32).

With respect to claims 13, the air permeability as measured by a Gurley air permeability tester is 1000 sec/100 ml or less (paragraph 61).

In re claims 14 & 15, the separator is employed in a lithium ion secondary battery comprising: a positive electrode obtained by bonding a positive electrode active material to a positive electrode current collector; a negative electrode obtained by bonding a negative electrode active material to a negative electrode current collector; and an electrolytic solution containing lithium ions held in the separator (paragraph 69-70).

Therefore, the instant claims are anticipated by Pekala.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pekala et al. U.S. Pub. 2002/0142214 in view of Oka et al. U.S. Patent 5,830,603.

Pekala teaches a multilayer separator film as described in the §102 rejection hereinabove. With respect to claim 7, the porous layer has a weight of 6 g/m^2. See Table 1. As to claim 8, the thickness of the porous layer is 1.3 microns. See Table II.

Pekala is silent to: a pore size of 0.01 to 1 micron (claim 4); the average pore size of the external surface being less than that of the interior in the porous layer (claim 5); and an external surface with an average pore size of 0.1 to 5 microns with the interior having an average pore size of 0.5 to 10 microns in the porous layer (claim 6).

Oka et al. U.S. Patent 5,830,603, teaches that it is conventional to employ larger pores in the interior of polymer membranes in order to promote increased oxygen permeability. See column 1, lines 30-35. With respect to claim 4, Oka teaches a pore size of 0.01 to 1 micron.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the instant invention was made to employ larger pores of Oka, in the interior of the separator of Pekala, in order to promote increased oxygen permeability.

As to the external surface having an average pore size of 0.1 to 5 microns and the interior having an average pore size of 0.5 to 10 microns, it would have been obvious to one of ordinary skill in the art to modify the porosity of the membrane, since such a modification would have involved a mere change in size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955).

As to the pore size of the porous layer of 0.01 to 10 microns, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the pore size of Oka in the membrane of Pekala, since such a modification would have involved a mere change in size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. In re Rose, 105 USPQ 237 (CCPA 1955).

Response to Arguments

Applicants asserts that the vinylidene fluoride of the references does not inherently contain a molecular weight of 150,000 to 500,000. Furthermore, Applicant asserts that characteristic is not necessarily inherent in the material taught by Pekala or Nakamizo. This argument is not persuasive. The arguments of counsel cannot take the place of evidence in the record. In re Schulze, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965). Examples of attorney statements which are not evidence and which must be supported by an appropriate affidavit or declaration include statements regarding unexpected

results, commercial success, solution of a long-felt need, inoperability of the prior art, invention before the date of the reference, and allegations that the author(s) of the prior art derived the disclosed subject matter from the applicant. See MPEP § 2145 generally for case law pertinent to the consideration of applicant's rebuttal arguments. Therefore, in the instant case, Applicant is advises to provide official evidence that the references of record do not teach the molecular weight necessitated in the instant claims.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In

no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Monique Wills whose telephone number is (571) 272-1309. The Examiner can normally be reached on Monday-Friday from 8:30am to 5:00 pm.

If attempts to reach Examiner by telephone are unsuccessful, the Examiner's supervisor, Michael Barr, may be reached at 571-272-1414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-

direct.uspto.gov.Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MW

9/6/05

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